amv

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,500	10/09/2003	Franz Hrubes	034691/269294	9849

826 7590 10/04/2004

ALSTON & BIRD LLP
BANK OF AMERICA PLAZA
101 SOUTH TRYON STREET, SUITE 4000
CHARLOTTE, NC 28280-4000

EXAMINER
LE, JOHN H

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.** 10/682,500	**Applicant(s)** HRUBES ET AL.	
	Examiner John H Le	**Art Unit** 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/09/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on the applications filed in Germany on 04/10/2001 and 03/20/2002. It is noted, however, that applicant has not filed a certified copy of the Germany application as required by 35 U.S.C. 119(b).

Specification

2. The abstract of the disclosure is objected to because of the form and legal phraseology often used in patent claims, such as "means" (line 10) should be avoided.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-8, 12-32, 34-37, and 39-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Kondraske (USP 4,873,655).

Regarding claim 1, Kondraske discloses a method for linearizing a nonlinear curve with a linearization circuit, wherein the curve represents the relationship between input signals and output signals of a sensor, and wherein an output signal is respectively associated to each input signal (Fig.1, Col.4, lines 41-63, Col.5, lines 5-11), the method comprising the step of adjusting the linearization circuit (calibration mode, adjust 30, 34) in an essentially automated way by means of a sequence controller (microprocessor 16) (Col.6, lines 28-37, lines 52-68).

Regarding claim 2, Kondraske discloses at least one output signal, which corresponds to an actual input value of the linearization circuit, is acquired and/or stored by means of the sequence controller (Col.5, lines 12-22, Col.6, lines 52-68).

Regarding claim 3, Kondraske discloses at least one reference input value is entered into the sequence controller via an input unit (A/D 38, Fig1).

Regarding claim 4, Kondraske discloses the reference input value is in analog form (A/D 38, Fig.1).

Regarding claim 5, Kondraske discloses the reference input value is put into the analog form by means of a D/A converter (D/A 32, Fig.1).

Regarding claim 6, Kondraske discloses the reference input value is put into the analog form by at least one adjustable source of signals (30, 34) (Fig.1, Col.6, lines 28-37, lines 52-68).

Regarding claim 7, Kondraske discloses the source of signals is formed by at least one reference voltage (Col.6, lines 28-31).

Regarding claim 8, Kondraske discloses the potentiometer (reference transducer 14, Fig1, Col.6, lines 15-18) is preferably adjusted in equidistant steps by means of the sequence controller (Col.7, lines 3-11).

Regarding claim 12, Kondraske discloses the actual input values and/or the reference input values are applied to a comparator (adjust in real tome for offset and gain) (Col.3, lines 7-19).

Regarding claim 13, Kondraske discloses the reference input values are compared with the actual input values by means of the comparator (Col.3, lines 7-19).

Regarding claim 14, Kondraske discloses the sequence controller adjusts the reference input values by iteration, until a predetermined deviation is undershot between the actual input value and the reference input value (Col.6, lines 52-68).

Regarding claim 15, Kondraske discloses the reference input values are selected as starting point, and/or midpoint, and/or end point of the linearized curve (Col.3, lines 41-50).

Regarding claim 16, Kondraske discloses the reference input values are selected from a subrange of input signals of the nonlinear curve (Fig.1, Col.44-56, Col.2, lines 22-35).

Regarding claim 17, Kondraske discloses the reference input values produced by the sequence controller are applied to the input of the linearization circuit via a switch (Col.6, lines 28-40, Col.6, lines 53-68).

Regarding claim 18, Kondraske discloses at least one reference output value associated with an actual input value is acquired and/or stored by means of the sequence controller (Col.5, lines 12-22, Col.6, lines 52-68).

Regarding claim 19, Kondraske discloses the at least one reference output value is adjusted by means of reference sources (30, 34) (Fig.1, Col.6, lines 28-37, lines 52-68).

Regarding claim 20, Kondraske discloses the reference input values are put into analog form by means of the D/A converter (D/A 32, Fig.1).

Regarding claim 21, Kondraske discloses at least one reference output value associated with an actual input value is entered into the sequence controller via an input unit (A/D 38, Fig.1).

Regarding claim 22, Kondraske discloses actual output values as supplied by the linearization circuit in response to the reference input values are compared with the reference output values by means of a comparator (adjust, calibration) (Fig.2, Col.5, lines 35-47,Col.6, lines 52-68).

Regarding claim 23, Kondraske discloses the output signal of the comparator is evaluated by the sequence controller (microprocessor 16) (Col.6, lines 52-68, Col.8, lines 1-8).

Regarding claim 24, Kondraske discloses at least one adjusting device is adjusted by means of the sequence controller (Fig.1, Col.6, lines 52-68).

Regarding claim 25, Kondraske discloses at least one adjusting device is used for adjusting the zero point (zero offset condition)(Col.6, lines 52-68).

Regarding claim 25, Kondraske discloses the sequence controller (16) activates the adjusting devices with digital pulses (Fi.1, Col.5, lines 17-19).

Regarding claims 27 and 39, Kondraske discloses the sequence controller performs an adjustment of the linearization circuit by means of the adjusting devices for each pair of reference input/reference output values, until a predetermined deviation is undershot between the actual output value and the reference output values (Col.6, lines 52-68).

Regarding claim 28, Kondraske discloses the adjusting device for adjusting the zero point (zero offset condition) of the linearized curve is adjusted such that the actual output value is essentially equal to the reference output value (Col.6, lines 52-68).

Regarding claims 29 and 34, Kondraske discloses a further reference input value produced by the sequence controller is applied to the linearization circuit (Col.6, lines 28-40, Col.6, lines 53-68).

Regarding claims 30 and 35, Kondraske discloses the associated reference output value produced by the sequence controller (16) is applied to the comparator (adjust 30, 34) (Fig.1).

Regarding claims 31 and 36, Kondraske discloses the actual output value of the linearization circuit of the further pair of reference input/reference output values is applied to the comparator (adjust 30, 34) (Fig.1, Col.4, lines 47-48, Col.6, lines 298-40, 52-58).

Regarding claims 32 and 37, Kondraske discloses the output signal of the comparator (adjust 30, 34) is evaluated by the sequence controller (16) (Fig.1, Col.6, lines 52-68, Col.8, lines 1-8).

Regarding claim 40, Kondraske discloses different linearized curves are stored in the sequence controller (16) (Col.6, lines 52-58).

Regarding claim 41, Kondraske discloses after linearizing the curve, the output signal of the sensor is applied as an input value to the linearization circuit by means of a switch (Fig.1, Col.6, lines 28-40).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> **(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.**

7. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondraske (USP 4,873,655) in view of Yunus (USP 5,848,383).

Regarding claim 9, Kondraske fails to disclose the reference input value is adjusted by means of at least three digitally activatable potentiometers.

Yunus discloses the reference input value is adjusted by means of at least three digitally activatable potentiometers (DAC 108, DAC 110, DAC 112)(Fig.1, Col.1, lines 19-23, Col.2, lines 8-12).

Regarding claim 10, Yunus discloses the output signals of the potentiometers are added by means of a summator (114) (Fig.1, Col.2, lines 8-12).

Regarding claim 11, Yunus discloses the settings (code) of the potentiometers are stored, in combination with the associated reference input value and/or a reference output value (Col.2, lines 24-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to includes means of at least three digitally activatable potentiometers as taught by Yunus in a method for linearizing a nonlinear curve with a linearization circuit of Kondraske for the purpose of providing a digital compensation circuit for calibrating a sensor (Kondraske, Col.3, lines 15-23).

8. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondraske (USP 4,873,655) in view of Bechel (USP 3,926,052).

Regarding claim 33, Kondraske fails to disclose an adjusting device for adjusting the slope of the linearized curve is adjusted in such a manner that the actual output value is essentially equal to the reference output value.

Bechel teaches an adjusting device for adjusting the slope of the linearized curve is adjusted in such a manner that the actual output value is essentially equal to the reference output value (Col.4, lines 3-7, Col.8, line 53-Col.9, line 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to includes an adjusting device for adjusting the slope of the linearized curve as taught by Bechel in a method for linearizing a nonlinear curve with a linearization circuit of Kondraske for the purpose of providing an apparatus for measuring a condition of a given environment and for providing an output signal which varies linearly with changes in such condition (Bechel, Col.1, lines 65-68).

9. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondraske (USP 4,873,655) in view of Spofford (USP 4,148,220).

Regarding claim 38, Kondraske fails to disclose an adjusting device for adjusting the linearity of the curve is adjusted such that the actual output value is essentially equal to the reference output value.

Spofford teaches an adjusting device for adjusting the linearity of the curve is adjusted (Col.4, lines 27-35) such that the actual output value is essentially equal to the reference output value (Col.4, lines 36-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to inform an adjusting device for adjusting the linearity of the curve is adjusted such that the actual output value is essentially equal to the reference output value as taught by Spofford in a method for linearizing a nonlinear curve with a linearization circuit of Kondraske for the purpose of providing a thermistor temperature sensing system for detecting a limited range of temperatures and a means and method for optimizing the linearization of thermistor characteristics whereby the thermistor may be utilized in the temperature sensing system to accurately sense temperatures within an extended range of temperatures (Spofford, Col.2, lines 18-25).

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H Le whose telephone number is 571-272-2275. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John H. Le
Patent Examiner-Group 2863
September 28, 2004

John Barlow
Supervisory Patent Examiner
Technology Center 2800